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Independent Refiner With New Name, Logo
Plans Major Expansion And Plenty
Of Product Keiters Operate Their Own Fleets

NPN

Foreign Producers Target Downstream Operations: What It Means To Oil Industry

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Regional Reporters:
East Coast: J. Richard Shaner, P.O. Box 1476, Morristown, NJ 07960. (201) 428-2902
Midwest: Peggy Smedley, 950 Lee St., Des Plaines, IL 60016. (312) 296-0770
South: Glenn Geigler, 950 Lee St., Des Plaines, IL 60016. (312) 296-0770
West: Mark Emond, P.O. Box 8130, Anaheim, CA 92812-0130. (714) 774-5598

Editor's Viewpoint

The offensive on downstream operations—in both the United States and abroad—by foreign oil producers is gaining momentum, and industry attention lately is riveted on how far it will go and what it will mean.

Many domestic refiners and marketers are concerned. Companies in partnership with the oil producers could well have a competitive pricing edge in buying crude, an edge that would flow through the refining and marketing process all the way down to the pump. That could get out of hand. If it turns into a battle for market share, broken bodies could be strewn all over the arena. To increase their share of the market, producers might be forced to lean on their downstream partners to slash street prices and compensate them for it by cutting their crude prices. The nose-dive in prices would be bad enough for refiner-marketers who have partnerships with producers. But what about those who don't? One jobber put it mildly: If a producer starts setting a refiner's jobber prices, "you guys (other jobbers) are in deep Tapioca."

It's also possible that the oil producing countries might, as the integrated multi-national major oil companies did a few decades ago, concentrate on making their profits upstream in production and, consequently, run as much crude through refineries as fast as they can, flooding the market and driving down street prices. But that might not be all bad. For a lot of jobbers, the '50s and '60s were glory days. But the party couldn't go on forever and the industry paid a heavy price with the dramatic shakeout in the '70s when thousands of stations and many jobbers went belly up.

There are, however, brighter prospects. Some knowledgeable and respected industry people have little or no fear of downstream integration—and, in fact, think it may be beneficial. Some are convinced it is the most natural and logical arrangement and that an efficient oil industry may be impossible without it. They see downstream integration as a stabilizing force, noting that as producers become involved with downstream marketing they have a stake in maintaining an orderly market. The chances of an oil cutoff, for instance, are sharply reduced, and producers who engaged in price cutting at the pump would undermine profitability for the whole industry, including themselves. The Government Accounting Office (GAO), for example, says its research shows the connection "between producing countries and consuming countries through downstream ventures has tended to add stability to the world oil market."

The one potential fly in the ointment is some event which prompts an oil cutoff. That changes the scenario and you'll need a whole new set of pieces for a whole new puzzle.

—Frank M. Victoria

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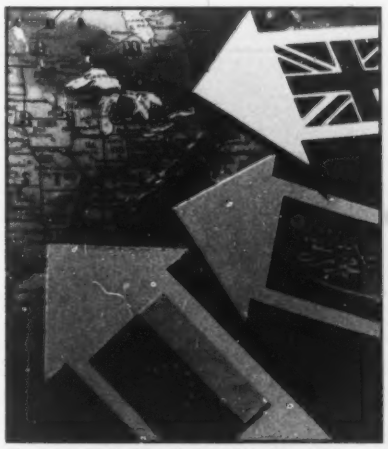


Texaco and Saudi Arabia. Coastal and China. Citgo and Venezuela. The list grows, and so do questions from marketers concerning the ultimate fallout of U.S. downstream integration by foreign countries. **Page 30**

What's in a name? Increased gasoline and store sales if you happen to be Johnson Oil Co. in Columbus, Ind. Business began to boom when the company adopted a catchy new name and logo–Bigfoot—for its C-store chain. **Page 42**

All the numbers suggest that not only will fuel oil be plentiful this winter, but that the world oil glut could trigger a price collapse as occurred in 1986. Much depends on what OPEC does. **Page 46**

Industry Profits Could Set Records For '88

If crude and product prices are relatively the same in the fourth quarter as they were in the third, just about every oil marketer should be singing happy songs early next year as 1988 earnings reports are toted up.

This applies to virtually all of the major oil companies and most of the second-tier companies and independents as well. It's going to be difficult indeed for most companies to lose money.

In the box scores below, increases are on the fantastic side—as high as 5000%. Remember that although percentages are frequently good barometers, they often are thrown out of perspective by the root numbers involved..

Nine-Month Nets: Up, Up And Awaaaay

(Millions of dollars)

	3 Qtr. 1988	3 Qtr. 1977	% Chng.	9 Mos. 1988	9 Mos. 1987	% Chng.
Exxon	$1,225.0	$1,065.0	15.0%	$3,880.0	$3,285.0	18.1%
Mobil	557.0	330.0	68.8	1,625.0	874.0	85.9
Chevron	420.0	297.0	41.4	1,593.0	1,016.0	56.9
Texaco	239.0	108.0	121.3	1,008.0	355.0	183.9
Shell	352.0	420.0	(16.2)	1,860.0	795.0	134.0
Amoco	552.0	412.0	34.0	1,688.0	983.0	71.7
BP-America	N.A.					
Arco	391.0	315.0	24.1	1,192.0	884.0	34.8
Tenneco (a)	—	—	—	—	—	—
Conoco (b)	71.0	76.0	(6.5)	323.0	195.0	65.6
Sun	72.0	137.0	(47.4)	(69.0)	265.0	—
Phillips	215.9	31.0	593.5	515.0	2.0	—
Unocal	97.0	29.0	234.5	359.0	152.0	123.0
Marathon (b)	183.0	125.0	46.4	387.0	458.0	(15.5)
Coastal	9.2	11.7	(21.4)	86.3	78.1	10.5
Amerada Hess	15.8	38.6	(59.1)	57.9	309.4	(81.3)
Ashland (c)	66.2	65.5	1.7	223.9	133.4	67.8
Diamond Shamrock	19.6	2.7	633.3	26.9	(1.7)	—
Pennzoil	39.3	4.7	736.7	1,400.0	26.4	5203
Kerr-McGee	30.5	18.0	69.4	76.6	66.3	15.5
Murphy	10.1	7.8	29.5	13.1	18.0	(27.8)
Amer. Petrofina	35.2	21.2	66.0	100.0	69.7	43.5
Citgo	N.A.					
Cumberland Farms	N.A.					
Getty	N.A.					
Circle K	N.A.					
Total Petroleum	39.3	1.3	—	33.1	24.0	37.9

(a) Tenneco, Inc. was in the process of liquidating its Tenneco Oil Co. division in the third quarter. (b) operating income, not net. (c) fourth quarter and full year, fiscal ends 9/30.

Downstream: Happy Days Are Here Again

(Millions of dollars)

	3rd Qtr. 1988	3rd Qtr. 1987	% Chng.	9 Mos. 1988	9 Mos. 1987	% Chng.
Exxon (total)	$537	$80	571%	$1,249	$135	825%
Domestic	220	7	3042	414	(50)	—
Foreign	317	73	334	835	185	351
Mobil (total)	219	71	209	701	241	191
Domestic	143	51	180	332	70	376
Foreign	76	20	280	368	171	115
Chevron (total)	243	20	1115	565	28	1918
Domestic	186	54	244	411	2	—
Foreign	57	(34)	—	154	26	492
Texaco	325	31	948	693	55	1160
Domestic	202	4	—	402	(63)	—
Foreign	123	27	356	291	118	147
Shell	152	68	124	395	132	199
Amoco (Worldwide)	319	97	229	631	147	329
Arco	121	30	303	280	100	180
BP-America	N.A.					
Conoco	99	33	200	254	104	144
Phillips (b)	130	59	120	302	137	120
Sun (total)	87	25	248	208	41	407
Domestic	86	21	310	204	24	750
Foreign	1	4	(75)	4	17	(77)

(b) Operating income, pre-tax.

• TRENDS

What Happens To The U.S. Highway System After '91?

Beyond 1991, there is no national plan for highway improvement, development, and expansion—and none in sight. This is in the face of widespread deterioration of the highway and bridge system, growing congestion—approaching gridlock on many urban streets—and horrendous national debt competing with highway spending.

Compound this dilemma with the fact that highway travel is growing by as much as 7% a year in fast-growing states and metropolitan areas, and that overall highway travel is expected to double by the turn of the century.

Motor fuel suppliers and many other transportation industries are worried about this awesome void and are trying to provide a program and leadership that will fill the gaps through to the year 2020.

With 1991 drawing near, highway backers for the past two years have been working to put together a program that, if adopted, would meet the goals they envision for the U.S. road system. The effort has been led by the Highway Users Federation, a national coalition of businesses, industries and associations promoting improved highway transportation safety and efficiency.

At a national conference in Washington D.C. in September, a major national highway program for the future emerged, a consensus worked out and endorsed by more than 500 business leaders and government officials, a cross-section of people involved in highway construction and use from every state. The conference was called the most important meeting on highway transportation in more than 30 years.

They came up with no magical formulas, because the problems associated with highways and roads do not lend themselves to that kind of solution. But a plan was laid out that its developers feel would carry the nation's transportation system along efficiently, well into the 21st century. The plan also includes price tags to give everybody some idea of what kind of expenditures are required.

The consensus is that the goals are reasonable and the cost is manageable, although steep.

Overall, the program would require an estimated annual investment by all levels of government of between $80- and $100-billion a year. Current highway expenditures by all levels of government total about $66-billion. Therefore, the improvements call for an increase of 20-50% annually.

Safety improvements are a high priority, because even at the present fatality rate, traffic deaths resulting from increased highway travel may exceed 80,000 a year by the year 2000, compared with 46,000 in 1987.

Another important goal is to expand the role of state and local governments while reducing federal controls. The separation of federal funds into hundreds of fiscal categories has made a nightmare of obtaining money for road work.

As for likely costs, here is a summary of goals and expected annual funding needs for "The Future Highway Program of America":

- Interstate travel—Up to $8-billion in improvements, the addition of lanes, and expansion, including a possible additional 10,000 to 20,000 miles of new interstate-type highways.
- Urban transportation—With urban congestion becoming a major national problem, individual block grants of up to $4-billion for roads and transit services; increasing transit expenditures from the general fund to as much as $3-billion from the current $2.1-billion.
- Rural transportation—$2-billion for upgrading and to begin a new program to develop scenic roads. Up to $3-billion for bridges alone, in rural and urban areas. Roads in national forests and parks, $300-million.
- Safety—An increase to $800-million from the current $560-million, with emphasis on driver education, safety engineering, law enforcement, and motor-carrier safety.

The Highway Users Federation is expected to approve the program by the end of 1988 and present it to Congress and the Administration in early 1989. HUF will seek Congressional hearings on the program in 1989, aiming for passage and signing into law by the president by late 1990.

The petroleum industry will get plenty of opportunity to help develop nationwide awareness and acceptance of the program.

—by J. Richard Shaner

• MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

SEPTEMBER	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
U.S. City Avg.	$0.992	$0.933	$0.974	$1.130
Regions:				
Northeast	1.007	.924	.969	1.147
North Central	.993	.950	.985	1.135
South	.986	.919	.962	1.117
West	.988	.936	.983	1.129

Source: U.S. Dept. of Labor, Bureau of Labor Statistics

STOCKS (Add 000 bbl.)

	10/28/88	10/30/87
Gasoline (Total)	215,00	619,751
Gasoline (unleaded)*	139,544	130,630
Jet Kerosine	41,469	42,512
Distillates	128,786	124,921
Residual	40,105	46,923

** Included in gasoline total*
Source: American Petroleum Institute

IPAA 1988 Forecast: More Of The Same

Play it again, Sam. Declining U.S. production, modest increases in demand and another hefty upswing in imported oil—that's the industry scenario for 1989 foreseen by the Independent Petroleum Assn. of America in its traditional fall supply/demand forecast.

There's nothing startling about IPAA's outlook for next year; in fact, it tracks pretty well with industry trends of recent years.

The following are a few of the particulars in the report:

- Domestic product demand is expected to increase by 1.2% in 1989, compared to IPAA's projected 2.1% increase by the end of 1988. Anticipated sluggish economic conditions will dampen the growth in demand, IPAA suggests.
- Domestic crude oil production will decline by 2.4% or almost 200,000 b/d in 1989, about the same as projected for 1988, according to IPAA.
- As would be expected with the increasing supply/demand imbalance, crude oil imports are expected to jump 6.9% next year to an average of 5.3-million b/d. Total imports next year will average 7.4-million b/d or 41% of domestic supply.

IPAA's supply and demand committee chairman, Les Deman, Texas Eastern Corp., says that because of declining oil production, "I think we could face a very critical problem in terms of vulnerability."

IPAA's 1989 Outlook: U.S. Supply/Demand Gap Growing

(thousands of b/d)

	1st Q	2nd Q	3rd Q	4th Q	F.Y. '89	F.Y. '88*	% Chng.
TOTAL DEMAND							
Motor Gasoline	7,028	7,567	7,519	7,382	7,375	7,302	1.0
Aviation Fuels	1,514	1,472	1,509	1,530	1,506	1,466	2.7
Mid. Distillates	3,600	2,940	2,833	3,330	3,174	3,152	0.7
Residual Fuel	1,519	1,156	1,201	1,289	1,290	1,290	0.0
Other Products	3,798	3,746	4,047	3,891	3,872	3,800	1.9
Domestic Demand	17,459	16,881	17,109	17,422	17,217	17,010	1.2
Total Exports	822	768	741	782	778	801	(2.9)
Total Demand	18,281	17,649	17,850	18,204	17,995	17,811	1.0
TOTAL SUPPLY							
Domestic Production							
Crude Oil	8,074	8,018	7,957	7,952	8,000	8,196	(2.4)
Natl. Gas Lqds.	1,605	1,599	1,600	1,603	1,602	1,603	(0.1)
Total Production	9,679	9,617	9,557	9,555	9,602	9,799	(2.0)
Imports							
Motor Gasoline	407	461	473	436	444	435	2.1
Aviation Fuels	78	106	79	66	82	80	2.5
Mid. Distillates	302	233	260	303	274	282	(2.8)
Residual Fuel	694	445	507	549	548	544	0.7
Other Products	664	656	733	773	708	701	1.0
Total Production	2,145	1,901	2,052	2,127	2,056	2,042	0.7
Crude Oil Imports	4,852	5,389	5,469	5,650	5,343	4,998	6.9
Total Imports	6,997	7,290	7,251	7,777	7,399	7,040	5.1
Other Supply	951	1,087	1,052	922	1,002	1,016	(1.4)
Total Supply	17,627	17,994	18,130	18,254	18,003	17,855	0.8
Refinery Inputs	12,950	13,604	13,621	13,471	13,414	13,320	0.7
ENDING INVENTORIES (Million bbl.)							
Motor Gasoline	231.8	219.4	218.4	223.9	223.9	223.8	0.0
Aviation Fuels	48.0	47.3	49.1	47.8	47.8	48.6	(1.6)
Mid. Distillates	103.3	115.3	145.0	141.2	141.3	142.3	(0.7)
Residual Fuel	43.4	42.5	44.3	45.7	45.7	46.1	(0.9)
Other Products	256.8	291.2	287.1	277.1	277.1	280.6	(1.2)
Total Products	683.3	715.7	743.9	735.8	735.8	741.4	(0.8)
Crude Oil	340.7	339.7	337.3	350.0	350.0	341.5	2.5
Total Stocks	1,024.0	1,055.4	1,081.2	1,085.8	1,085.8	1,082.9	0.3

*Estimated.

Source: Independent Petroleum Assn. of America, Supply & Demand Committee Report, October 1988.

Domestic Crude Reserves Up, But New Finds Still Lag

Total U.S. crude oil reserves were up by 1.4% in 1987, the first increase in three years according to the Energy Information Administration's latest estimate of U.S. petroleum reserves. The net increase from the previous year was 367-million bbl., bringing the U.S. total to 27,256,000 bbl., EIA says.

However, about two-thirds of EIA's reported increase, or roughly 2.5-million bbl., was due to upward "revisions" in the agency's earlier estimates. The net increase was also helped by the fact that domestic crude production was 100-million bbl. less in 1987 than in 1986, in effect rolling over that unproduced crude into the reserve total.

Total crude oil discoveries were also up in 1987, increasing 691-million bbl. or about 30% above the year-earlier discovery rate, but still 22% below the average of the past decade. More than half of the new-field discoveries were made in Alaska's North Slope.

Other positive factors cited by EIA in the improvement in reserves included the strengthening of wellhead prices in 1987 and enhanced recovery programs in Alaska, California and West Texas.

While crude reserves improved somewhat, proved U.S. natural gas reserves dropped for the sixth straight year to 187.2-trillion cu.ft. in 1987, reflecting, EIA says, a big drop in exploratory drilling, record low discoveries and higher natural gas production.

In another report, this from accounting firm Arthur Andersen and Co., it was shown that the number of independent oil producers in the U.S., who drill 75% of domestic onshore wells, had declined from 165 in 1985 to 117 in 1987. Lower crude prices have been cited as the main culprit in the decline, since those prices effectively prevent producers from recovering their drilling investments.

The failing crude prices of recent weeks are expected to deal another blow to the already ailing energy-based economies of Texas and other oil patch states.

U.S. Crude Oil Reserves: 1981-1987
(Millions of bbl.)

Year	Net Revisions And Adjustments	Total Discoveries	Production	Proved Reserves-Dec. 31	Net Annual Change (%)
1981	1,409	1,161	2,949	29,426	−1.3%
1982	351	1,031	2,950	27,858	−5.3
1983	1,973	924	3,020	27,735	−0.4
1984	2,604	1,144	3,037	28,446	+2.6
1985	2,027	995	3,052	28,416	−0.1
1986	912	534	2,973	26,889	−5.4
1987	2,549	691	2,873	27,256	+1.4

Source: Energy Information Administration

Petromark Holding Its Own With Tank Claims

While more and more insurance companies are feeling squeezed by increases in marketer claims for underground storage tank releases, a Petromark official says its losses have not been substantial.

Max Clay, president of the organization, says most of the spills reported stem from excess levels of hydrocarbons from overspills, rather than tank leaks themselves. Since Petromark was formed in February it has had about 60 claims with a payout of about $1.3-million. By the end of this year the company will have insured more than 1,000 marketers. It now has 910 on the books.

"Our losses have been modest. But as marketers replace more and more tanks we anticipate we will see even more problems," says Clay.

Substance Abusers Cost Business $50-Billion

American business pays a $50-billion annual penalty for alcoholism and illegal drug use in the workplace, says a leading authority.

Alcoholism and illegal drugs in the workplace leads to absenteeism, sick leave, accidents, decreased employee performance and production and increased health and other insurance costs. Also, the company's image is tarnished and its ability to compete against increasingly aggressive rivals diminishes, says J. Kenneth Cagney in a guide entitled *Personnel Manager's Guide to Beating the Drug & Alcohol Problem in the Workplace.*

He says more than six million alcoholics are on the payroll of American business. According to the National Council of Alcoholism, alcoholics cost companies more than $30-billion a year and drug abusers cost employers $20-billion annually.

Because these costs are so exorbitant, Cagney's manual is designed to provide extensive information on the detection control and treatment of substance abuse. In his guide, he provides sample policies, drug charts, case histories and successful approaches used by leading companies.

In addition, the manual discusses survey results on what employers are doing about this problem, a directory of consultants to state occupational alcoholism programs, a listing of local ALMACA chapters, area facilities offering treatment and counseling and a supervisor's guide to on-the-job alcoholism and drug problems.

The guide is available for $79.95 plus $3 postage and handling. For more information or to order, write Suzanne Shelton at the HIRE Institute, 1730 N. Lynn St., Arlington, VA, 22209. Or call (703) 841-8150.

Unocal's EFT Policy Debits Dealer Rent

Unocal Corp. has made a broad commitment to automatically debiting monthly rent payments from dealer accounts in the West and Northwest, anchoring its reasons for the rollout to enhanced efficiency, both for the dealer and the company.

A Unocal spokesperson says the rent fees are automatically deducted from accounts on the 25th of each month. Formerly, a statement was sent to dealers.

The Unocal representative says after some initial dealer reservations—a characteristic of electronic funds transfer programs early in their implementation, she reasons—dealers have generally been favorable.

Among the states where Unocal has introduced EFT debiting are California, Arizona and Nevada.

Lubricant Sales Growth Better Than Expected

Total sales of lubricants in the United States surged by 5.7% last year to a total of almost 2.5-billion gal.—an unexpected jump in an industry where paper-thin increases in volumes, or even declines, from year to year are the norm.

According to the latest *Report on U.S. Lubricating Oil Sales* published by the National Petroleum Refiners Assn., sales of automotive oils increased by 5.6% to 1,458-billion gal. from 1986 to 1987.

Sales of automotive crankcase oils and transmission and hydraulic fluids were the highest recorded in the 1980s (see chart), increasing by more than 4.9% and 10.7%, respectively.

Total industrial oil sales were up 5.3% in 1987 to about 974-million gal. Metalworking oils paced this sales growth with a 10.6% increase.

Sales of non-SAE J-183 engine oils, which include aircraft and two-stroke engine lubricants, were relatively flat in 1987, increasing only 0.4% according to the NPRA survey.

Total grease sales were up 5.5% in 1987 to almost 57-million gal., but that figure is still below the 62-million gal. total of 1980.

The NPRA data also reveals some fairly prominent shifts in market share among the various lubricant categories since 1981. The major shift has taken place between monograde and multi-grade oils, which had rougly equal market shares in 1981. In 1987, the multi-grades, with 32% of total lubricant sales, had taken a better than two-to-one lead over monogrades (15%).

From 1981 through 1987, automotive lubricants increased their share of total U.S. oil sales from 57% to 60%, according to NPRA, while industrial oils tailed off to 40% of the total market in 1987.

For the complete survey report, contact the NPRA. Their mailing address is 1899 L St. N.W., Suite 1000, Washington, DC 20036.

U.S. Lubricant Sales: 1980-1987
(Millions of Gal.—Rounded Numbers)

	1980	1981	1982	1983	1984	1985	1986	1987
AUTOMOTIVE OILS								
SAE J-183 Engine Oils (a)	1,003	986	957	1,018	1,093	1,082	1,097	1,151
Non-SAE J-183 Engine Oils (b)	24	23	21	22	22	24	23	23
Transmission/Hydraulic Fluids	190	181	181	189	207	206	210	232
Gear Oils	48	50	45	48	53	52	49	51
Total Automotive	1,265	1,240	1,204	1,278	1,375	1,383	1,379	1,458
INDUSTRIAL OILS								
General Industrial Oils	420	410	332	345	366	367	357	385
Industrial Engine Oils	157	152	134	134	141	139	136	141
Metalworking Oils	91	90	77	84	85	87	76	84
Process Oils	291	291	251	272	303	326	352	364
Total Industrial	959	942	795	836	895	921	921	974
Total Grease (c)	62	62	51	55	61	57	54	57
Total Lubricants	2,286	2,244	2,049	2,168	2,331	2,361	2,354	2,488

NT: Data for previous years includes respondent revisions.
(a) Includes monograded and multigraded.
(b) Includes aircraft and gasoline fueled two stroke.
(c) Conversion from lb. to gal. (7.5 lb. = 1 gal.)
Source: National Petroleum Refiners Assn.

Pending Legislation Could Squeeze Marketer Finances

Mandatory health insurance and minimum wage increases coupled with underground storage tank replacement and financial responsibility insurance regulations will undoubtedly hurt marketers financially, warns Truman Arnold, CEO of Texarkana, Texas-based Truman Arnold Co.'s.

Arnold says the combination of these three obstacles will cost his company more than $2-million a year.

"These are some big ticket items. Just one of them most likely won't break a marketer, but all three combined certainly can," says Arnold.

One Midwest jobber concurs. He says low-volume stations will not be able to absorb the costs. "The economic impact is just too great even for large jobbers who have several stations," he says.

Minimum wage advocates were pushing legislation to increase the federal minimum wage from $3.35 an hour to $4.55 over the next three years, an increase which would cost American businesses approximately $48-billion.

The 100th Congress voted against an increase and the minimum wage will remain at $3.35 an hour.

The National Assn. of Convenience Stores' members fought against the hike, which incidentially, was their number one legislative priority.

Even though minimum wage failed, legislation is still pending in Congress requiring that employers provide a "minimum" level of health insurance to all employees and their dependents.

The legislation also requires employers to provide for all medical care, including serious illness, and to shorten the waiting period for the coverage. The company must also pay at least 80% of the costs. So far, no action has been taken on the proposed legislation.

Arnold says if the minimum health insurance is required for all employees, premiums would boost his costs by more than 50%.

"Only time will tell which chain operators will land on their feet and who will take it on the chin," says Arnold.

Foreign Producers Target Downstream Operations: What It Means To Oil Industry

The rapid, aggressive thrust by foreign oil producers into U.S. refining and marketing operations is attracting increased attention—and generating growing concern.

The swift beachhead they've established in the domestic oil market, however, is only part of an international phenomenon. The United States just happens to be the current primary target. In fact, the global scope of the development makes it one of the most significant since those "Arab oil problem" countries nationalized their petroleum

By Mark Emond
Contributing Correspondent
and NPN Staff

industries in the 1970s and helped shatter the reign of the so-called "Seven Sisters," the multinational integrated major oil companies which dominated the worldwide oil market for decades.

It's called "downstream integration" or "reintegration," meaning that the upstream, or crude oil end of the business, is forming commercial ties with the downstream, or refining and marketing end.

In principle, there's nothing new in this, because integration existed generally in the oil industry internationally prior to nationalization in the oil producing nations.

But what's going on now is a rebirth of another form of integration. It's the bringing together of separate ultimate producers, mostly nations, with separate ultimate sellers, mostly companies. The purpose is to form a stable and secure relationship from wellhead to consumer in a very uncertain oil world.

The questions this growing trend raises are fundamental. What is the fate of each segment of the industry with and without integration, and what is the fate of each member of each segment with or without a deal? Is the trend irreversible and how far will it go?

And what does it mean for U.S. oil marketers, who are largely helpless to influence whether or not downstream integration takes place with their suppliers? The swift course of events could already be casting them fatally.

"Some U.S. refiners may be in a position to decide whether or not to integrate with a producer and some may not because they aren't deemed desirable partners. Some with a choice may prefer to go it alone at their own possible peril.

U.S. and international majors and some other large integrated oil companies, the big players in the drama, probably have two choices: whether to integrate, and with whom. Oil is not forever, producers are not forever, and neither is the present glut of crude. Finding out too late what was the right choice might not be that far down the road.

In short, oil industry players are standing at the threshold or the brink, depending on what they are and the choices they make—or somebody makes for them. It won't be long before they find out whether their prospect is an open door or an empty chasm. And it may turn out to be just one or the other.

International scope

Internationally, downstream integration has been gaining steam for several years. John R. Ferriter, the U.S. State Dept.'s deputy assistant secretary for international energy and resources policy, goes through a few highlights:

Industry players are at the threshold or the brink, depending on what they are and the choices they make—or somebody makes for them.

Kuwait and Venezuela have been investing downstream since the early 1980s. However, their strategies have only recently attracted a great deal of attention in OPEC as a result of the price downturn of the last several years.

Kuwait markets much of its total oil output as refined product, both from its refineries in Kuwait and in Europe.

Venezuela owns interests in refineries in Germany and Sweden, but has put its major effort into the United States.

Other producers are doing the same. Norway's Statoil expanded into Danish and Swedish refining, marketing, and distribution in 1988-89. Libya added to its Italian marketing operations in 1985. Mexico bought a refinery in Spain. Privatization of Spanish industry is attracting a good deal of foreign investment (see chart on page 30 for list of U.S. downstream investments).

And that's just part of the list.

Jobber Bill Wright, chairman of Western Marketing in Abilene, Texas, sees downstream integration as an integral part of "the globalization of business." He calls it "a growing partnership between government and free enterprise," adding that "it seems to be the trend around the world in most businesses."

Jobber John Arnold, chairman of Petroleum Products Corp., Harrisburg, Pa., says interest in integration runs both ways, upstream and downstream, and it's global. He notes that when Saudi Arabia announced it was interested in downstream investment, the Wall Street Journal reported 30 companies responded with written proposals.

There are some holdout areas, Ferriter says. Japan doesn't allow downstream integration there. As a matter of fact, it's probably out of the question in the retail segment because 80% are private businesses operating only one station. The Japanese government is restructuring the country's petroleum industry and is unlikely to allow any foreign investments until the process is complete, he adds.

Given a free and open economy, integration appears to have little opposition, in its present dimension.

Why integration is natural

For most of the oil industry's history, it was integrated by the international major oil companies: the "Seven Sisters" — Exxon, Mobil, Socal, Texaco, Gulf, Royal Dutch Shell, and British Petroleum — plus CFP (Compagnie Francaise Petroleum).

These companies explored for oil in foreign lands, most finding bonanzas of one dimension or another — many enormous. Since their operations, operated from wellhead to the marketplace, they were in a position to control the complex petroleum distribution system.

The controlling system and its workings are described lucidly by a participant, M. Sylvain Robinson, former president of Shell International Trading Co., London, and now chairman of joint energy programs for the Royal Institute

of International Affairs. He explains:

The Seven Sisters and CFP "controlled production in the major producing areas through a system of interlocking concession arrangements. Most companies had interests in more than one concession area. Production capacity and production allowables were agreed for each concession area by voting procedures that broadly insured that capacity was not brought on stream at a rate greater than world markets could absorb. The markets were also dominated by the same producer companies, sometimes in combination."

Each of the companies was integrated, and the whole system was integrated, vertically and horizontally. After nationalization, the producing countries lost the integration and, therefore, the control.

The U.S. General Accounting Office, the investigative arm of Congress, sees downstream integration as an economic need of the oil industry. In a recent study called "An Overview of Changes in the World Oil Market," GAO says, "Efforts by OPEC countries to integrate the various segments of their oil industries are driven by the

Downstream Investments by OPEC Producers

Buyer	Seller	Country	Year	Type of Asset
Kuwait	Gulf	N. Europe	1983	78,000 b/d refinery, Rotterdam 57,000 b/d refinery, Denmark 750 outlets in Benelux countries 825 outlets in Scandinavia
Kuwait	Gulf	Italy	1984	1,500 outlets in Italy and share in closed refinery
Kuwait	Hays	UK	1986	800 outlets in UK
Kuwait	Ultramar	UK	1987	465 outlets in UK
Kuwait	Nafta	UK	1987	53 outlets in UK
Kuwait	BP	Denmark	1987	389 outlets in Denmark
Venezuela	Veba	W. Germany	1983/85	Joint refineries, West Germany 110,000 b/d, Scholven (50%) 100,000 b/d, Horst (50%) 144,000 b/d, Neustadt (12.5%) 142,000 b/d, Karlsruhe (16%)
Venezuela	Southland/ Citgo	US	1986	50% interest, Citgo's 320,000 b/d Lake Charles, La., refinery
Venezuela	Nynas	Sweden/ Belgium	1986	50% interest in 3 refineries 25,000 b/d, Nynashamn, Sweden 12,000 b/d, Gothemburg, Sweden 15,000 b/d, Antwerp, Belgium
Venezuela	Champlin	US	1987	50% interest in 165,000 b/d Corpus Christi, Tex., refinery
Aramco, Saudi Arabia	Texaco	US	1988	50% interest in eastern US 250,000 b/d ref., Port Arthur 225,000 b/d ref., Convent, La. 140,000 b/d ref., Delaware City 1,450 owned and leased outlets 10,000 branded outlets
Abu Dhabi	Cepsa	Spain	1988	10% interest in Cepsa 160,000 b/d ref., Cadiz, Spain 130,000 b/d ref., Tenerife, Spain
Libya	Amoco	Italy	1983	70% interest in 105,000 b/d Italian refinery and 800 outlets
Libya	Fintermica	Italy	1987	70% interest, 800 outlets, Italy
Libya	Coastal	W. Germany	1988	Crude supply, 100,000 b/d refinery in Hamburg
Venezuela	Tenneco	US	1988	Bidder on 130,000 b/d refinery in Chalmette, La.
China	Coastal	US	1988	50% interest, 55,000 b/d refinery in Calif., marketing terminals
Venezuela*	Unocal	US	1988	50% interest, 151,000 b/d ref. in Lemont, Ill., 3,400 outlets in 12 Midwest states

Source: Petroleum Analysis Ltd., NPN.
* Tentative.

U.S. refineries, such as Citgo's Lake Charles, LA. plant, now co-owned by Venezuela, are prime targets for overseas producers. An estimated 18% of U.S. refining capacity is now controlled by foreign interest.

individual countries' needs to secure market access in major industrial countries for their oil and thereby generate additional oil revenues."

Robert O. Anderson, former chairman and CEO of Atlantic Richfield and now an integrated independent, views downstream integration as necessary and belated. "The only thing that's surprising is that it's taken them this many years to realize that to have access to markets, you really have to have some downstream position of your own," he says. "They're beginning to realize that having a position which is closer to the ultimate consumer is the only real security for an oil producer."

Anderson notes that nonproprietary, or nonequity oil is the last to sell. "Companies instinctively give preference to crude oil that's produced in areas where they have equity interest... Differentially, proprietary oil finds a market long before nonproprietary oil. Most of the Middle East countries today are selling nonproprietary oil, and now they're acquiring downstream operations and trying to restore the connection between the upstream and the downstream."

"The idea of going back to the old, integrated oil industry is not new," explains Marcello Colitti, energy adviser to ENI, the Italian national energy company. "It was born on the same day in which the producing countries obtained control of oil reserves but not of the oil market."

He is even more emphatic: "Running the oil business in the present nonintegrated fashion is not easy—it is perhaps impossible."

The need for integration affects almost everybody. He says, "We are back to the hard necessities of the oil industry. Only the integrated survive. That makes life hard for the majors themselves, who have to buy at least 40% of their crude from producing countries, and impossible to nonintegrated refiners and sellers, who, by their own very existence, create the product glut which kills them.

"The final challenge is therefore to reintegrate the oil industry."

State Dept.'s Ferriter says that as the U.S. becomes more dependent on imports, it is only natural that refiners will increasingly look to international integration rather than domestic integration.

John Lichtblau is president of the Petroleum Industry Research Foundation, Inc., (PIRINC), New York, an economics think tank which is supported by oil companies. He believes that "most of all, foreign integration gives domestic refiners secure access to crude at less cost than if they have to produce it themselves."

What producers want

Crude producers want and need secure markets. Within the Organization of Petroleum Exporting Countries, producers have been fighting a losing battle to maintain prices by limiting production levels. The 8-year-old Iran-Iraq war complicated the problem because Iraq would accept no production limits and Iran wanted higher prices supported by production cuts—clashing strategies, but both designed to support their war efforts.

Most producers discount prices to increase their sales, undermining their own official target price. Many producers exceed their quotas, flooding the market and weakening prices.

The point may be a little difficult to grasp, but it's understood by oil producers and the petro-financial community: For the largest oil producers, sales not made now are considered not merely postponed, but almost surely lost.

Duke R. Ligon, manager director, mergers and acquisitions, of Bankers Trust Co., New York, a company that helped Venezuela make its U.S. downstream deals with Citgo and Champlin, explains: "Because the average life of many producers' reserves is extremely long, they are keenly aware that the value of any production they fail to place today is virtually lost forever. To producers, the value of today's curtailed production is equal to the present value of the production on the last day of the reserve's life.

"I don't have to tell you" he continues "that the difference between that figure and zero is not even worth mentioning for a country like Saudi Arabia. This large difference in value between producing today and *maybe* producing later, in turn creates pressure on producers to discount their crude in soft markets.

"By establishing ties with refiners and marketers, producers obtain a sort of 'market insurance.' These ties enable them to force their crude through the system and avoid discounting heavily on the last few marginal barrels that would otherwise not find a home."

Italy's ENI adviser Colitti says, "OPEC producers are structurally unable to resist competitors who accept a lower price. In order to stop losing market share, they have no other way than to integrate downstream, in order to protect at least part of their oil from the crude-to-crude competition."

Some crude is harder to sell than others, for example, heavy or sour (high-sulfur). Jobber Arnold observes that many of the deals are with countries which have heavy crude and want to assure a place where it can be processed. State Dept.'s Ferriter also notes the motivation in some cases is to find a home for heavy or high-sulfur crude.

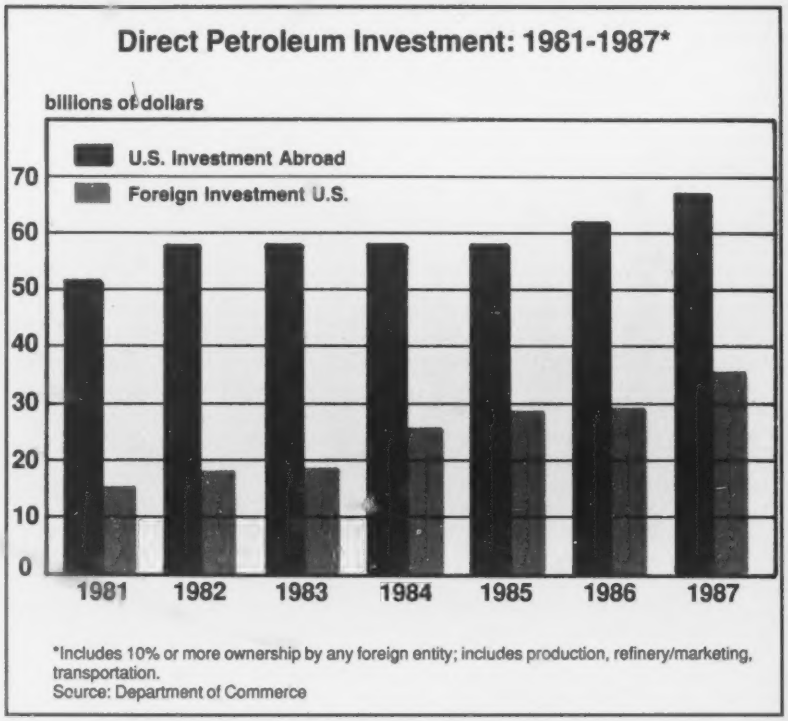
Stability or instability?

There's widespread belief that downstream integration will help stabilize markets, but there are many dissenters. CEO James Kinnear of Texaco, which is getting ready to launch a partnership with Saudi Arabia, believes it will.

CEO Ronald Hall of Citgo, already operating in a partnership with Venezuela, thinks so too, believing that the market effect has been one of stability with and no negatives having occurred as a result of the partnerships.

Venezuela, which has joint ventures with Citgo and Champlin and is testing another with Unocal, has said repeatedly its policy is to enhance stability in the downstream markets. The country also plans downstream integration in natural gas and petrochemicals.

Italy's Colitti, a believer, urges, "Accept,



actually support, reintegration of the oil industry. The entry of producers as downstream operators will create an important opportunity . . . The producers may get out of the difficult position of crude sellers and take some responsibility for the stability of the market."

He concludes, "Once the newcomer (producer) has taken over a reasonable market position, strongly aggressive marketing would only have the effect of lowering the profitability of the whole industry, including his own . . . There are clearly some rules of the game to be respected."

The conventional impression is that markets have been stabilized by producer investments. "According to some oil experts we contacted and studies we reviewed," says GAO, "the resulting linkage between producing countries and consuming countries through downstream ventures has tended to add stability to the world oil market."

Ferriter is of another mind. He says, "Most experts believe downstream integration will not necessarily enhance price stability . . . There are no volume reductions in any of these arrangements . . . Producers are seeking to minimize volume risks, not price risks."

Some think there can't really be security of supply when it's highly probable crude will go to whoever will pay the most for it.

Many say that if securing market share is an object, then price-cutting is inevitable. Bruce McCall, former marketing vice president of Conoco and now a consultant, asks rhetorically:

"What happens if Texaco can't move the 600,000 b/d? What's Saudi going to say to them? They sit around the board table 50-50 and say cut the price—we want to move some product. They'll do it. That will be the outcome. It's not all peaches and cream."

McCall mulls the mechanics of this process. "For producing countries, moving crude is how you make money. The cost of oil to the Saudis can't be more than 50-60¢ a bbl. Many producing countries started building their economies when oil was $28-$30 a bbl. That's why Saudi Arabia wants to have a cinch way to move crude. If Texaco can only sell 450,000 b/d because of pressure from other joint-venture companies, the Saudis will say cut the price: we'll cut the crude price from $14-$12, and we'll split the difference."

Jobber Wright adds, "If Saudi Arabia is setting Texaco's jobber prices, you guys (other jobbers) are in deep tapioca."

Michael Abercrombie, Cato Oil Co., Salisbury, Md., a Texaco jobber, is generally favorable to the prospect of the Texaco/Saudia Arabia joint venture. However, he concedes that if such joint-venture partners get too aggressive in a push for market share, "there could be a major brawl in the marketplace."

Importantly, the current downstream integration is vertical only, not horizontal, emphasizes Robinson of the Great Britain's Royal Institute of International Affairs. "That means that in itself it has no effect whatever on the balance between supply and demand. This has to be controlled, as now, through an honoring of an agreed system of quotas."

Robinson shares the belief that downstream integration will cause prices to be less stable—but, more importantly for refiners and marketers, it will move price competition into the product market.

He says, "It is extremely difficult to see how integration on the new model will have any serious effect on the current instability of oil prices. Indeed it is arguable that it could add to instability on two counts:

"First, downstream investments are highly capital intensive (costly) and there will be a strong motivation by the new owners to run crude through the system just so long as there is a cash positive margin available. As a consequence, production constraint is not encouraged by downstream investment.

"Second, a producer confronted with market-responsive product prices is almost bound to accept the concept of market-responsive pricing of crude into the refining system. This is probably not a bad thing anyway, but it is a final nail in the coffin of OPEC efforts to restore fixed prices into the crude-oil market.

"The end result is not a new price stability but a tendency for price competition to shift from the crude-oil market into the product market," he concludes.

William Haslam, president of Pilot Oil Corp., Knoxville, Tenn., thinks price swings occurring in the market are indicative of the effect of reintegration. He adds, however, that his company thrives in roller coaster conditions. "A volatile market is best for us."

Nonetheless, Haslam has some misgivings. Although the effect of foreign integration has been "negligible" so far, it could have a negative impact if the producers become satisfied with profits upstream and decide to unload product downstream with only moderate concern for the price it commands.

Nordine Ait-Laoussine, president of Nalcosa, an energy consulting firm based in Geneva, Switzerland, says downstream integration will not bring market stability because the fundamentals of supply and demand cannot be improved that way, conflicts between producers and consumers will remain, and price speculation and competition will continue.

Further, he says, "Downstream integration may, in fact, contribute to further volatility," because producers lose flexibility in where and at what prices they can sell, disparities in production of OPEC members widen, and the concept of an official price dies.

Ait-Laoussine concludes that even with downstream integration, production controls are crucial in achieving price targets, and that OPEC has been unable to achieve such controls.

(For Ait-Laoussine's summary of the

"myths and realities" of downstream integration, see accompanying sidebar, page 34.)

The downstream view

It's a pragmatic conclusion that refiners and marketers entering joint ventures with producing countries see advantages or they wouldn't be doing it.

But just as pragmatically, some see pitfalls which will tend to widen as more producers and refiners do the same and integrated ventures come into head-to-head competition in the marketplace.

John R. Hall, chairman and CEO of Ashland Oil, the biggest independent refiner/marketer in the country, lists why an independent refiner might be interested in a joint venture with a producer nation:

(1.) Long-term security of crude oil supply.

(2.) Access to raw materials at either an attractive price or a favorable refinery margin.

(3.) Cash from the purchase price paid by the new partner.

(4.) The availability of a partner to share in future investments.

(5.) Reduced exposure to industry volatility.

(6.) The "musical chair theory," by which he means the fear a company might find itself without a partner when the music stops.

Nowhere is it stated that some may hope to obtain a buying advantage over competitors—but it can hardly be overlooked as a possible reason.

Texaco's Kinnear has insisted the Texaco-Saudi company will buy Saudi crude in "arm's length" transactions, and he rules out any suggestions that the joint company would receive discounts on the crude it purchased from the Saudis.

Kinnear says the three joint-venture refineries, which run about 70% imported crude (much of that already from Saudi Arabia), won't run exclusively on Saudi crude; some of the remaining oil will be acquired through spot, or noncontract, purchases.

The option to buy elsewhere would protect the venture from possible inflated crude prices from the Saudis. But it doesn't exclude lower prices. It's difficult to imagine the joint company turning down a lower price if the Saudi objective was to move more crude oil.

Gene McGraw, Texaco's general manager of refining and marketing, says the company isn't particularly interested in lower prices, but rather in making a proper return on assets. But this doesn't mean that the proper return isn't contingent on good margins, which could be based on lower crude prices.

Jobber Wright says, "The new capital that comes into Texaco is going to enable them to be very, very aggressive in some locations and the kind of retail outlets they buy. Bear in mind that this money coming in is fresh capital and jobbers have to compete with capital that they generate from operations on which they are paying 32% taxes."

Since the Saudi joint venture is providing Texaco with an infusion of about $2-billion, the company can clearly intensify its expansion in marketing. Texaco wholesalers have quoted McGraw as saying that Texaco has only 2,500 investment (owned) stations, compared with 4,000-5,000 for some of its major competitors, and the company intends to catch up.

This would also appear to free up capital to enable Texaco to step up expansion in other parts of the country not involved in the joint venture.

Coastal Corp., which recently entered a joint venture with China, says it plans to upgrade its refinery and expand on the West Coast.

No doubt Citgo and Champlin can upgrade and expand with capital received from their deals with Venezuela.

Ashland's Hall says an infusion of capital would come in mighty handy in refinery upgrading made necessary by tougher standards set for gasoline and diesel fuel and for meeting other environmental regulations. In marketing, outside funds would help in expansion and meeting growing environmental costs, such as protecting against liabilities associated with leaking underground tanks.

Some refiners and marketers without sufficient capital might not be able to meet these challenges on their own.

Another Ashland spokesman, retired vice chairman Robert T. McCowan, compares a refiner integrating downstream into marketing with a producer integrating downstream into refining.

He says, "From our experience with refining and marketing integration, we believe that a production integration would be good for both the producing country as well as Ashland."

He continues, "Much depends on the structure of the arrangement since the price for the assets could be unattractive to the refinery if it has a low tax base requiring much of the money received be paid in taxes. The operating agreement could be the most crucial part of a joint venture, particularly for the refinery, especially if he does not have to pay much of the price received for taxes."

Ashland's tax base may not be the same as Texaco's or Citgo's. Ashland is not known to have made any deals — yet.

Conflicts of interest

Nothing is all roses, and any two parties can and usually will have different interests, any of which can come into conflict. In the case of producers and refiners, there are any of a number of possibilities, but crude prices sit smack in the middle as a leading contender for disagreement.

Branded Retail Outlets Supplied by Foreign–Affiliated U.S. Companies, 1984-1987

Company	1984	1985	1986	1987
Shell	11,010	11,129	11,133	10,947
Conoco (DuPont)	5,430	6,276	6,860	5,918
American Petrofina	4,385	4,429	4,209	4,117
Sohio/BP	2,100	2,900	8,100	7,550
Total	1,847	1,942	1,915	2,394
Atlantic	—	547	941	940
Ultramar	368	378	136	300
Husky	720	0	0	0
Citgo	—	—	7,296	7,458
Total Above	25,860	27,421	33,519	39,725
U.S. Total	132,080	124,600	120,150	115,870
% of U.S. Total for Above	19.6%	22.0%	27.9%	34.3%*

Source: Profiles of Foreign Direct Investment in U.S. Energy, 1987. Energy Information Administration, Department of Energy.

*Note: This percentage will increase sharply in the coming year or years. For the purpose of showing the approximate effect of Texaco/Saudi (11,450 outlets) and Unocal/Venezuela (3,400 outlets) joint ventures, if and when they go through, the total would be 54,575, or 47.1% of the U.S. total. Of course, station numbers will change in 1988 and 1989.

Ashland's CEO Hall nails the point down: "The price of the raw material is one issue on which the interest of each partner is different and could be the biggest source of conflict in the partnership . . . The price of raw material is a critical issue for independent refiners." In general, he feels there is an enormous potential for disagreement between producer and refiner.

Ashland's McGowan recognizes there are some possible problem areas. "Of course, there are always negatives that both sides of a joint venture must consider . . . Both the refinery and producer could very well have problems involving conflicts of interest that could be detrimental to either party."

Independent Robert O. Anderson, formerly Arco chairman, says, "I would have some real reservations in my mind about a 50-50 joint venture with a producing country. I'm not sure in the long run your interest would be identical."

It may not be in the best interest of an integrated major or of a refiner/marketer to buy exclusively from one company or even just a few companies. Britain's Robinson says, "An international, integrated company would normally expect to have commercial relationships with at least six or 10 primary suppliers. To create a bond to the exclusion of others and still link with a number of producers is a very difficult commercial, political, and diplomatic problem."

Integration: The Myths & Realities

The objective of downstream integration is to improve revenues and price stability, but Nordine Ait-Laoussine, president of Nalcosa, Geneva energy consultants, believes these hopes are built on myths. Here's how he sees it:

Myth: Refining and marketing adds value to crude.

Reality: Not for new entrants paying a premium in a stagnant market.

Myth: Downstream integration guarantees "offtake" of crude.

Reality: Pricing freedom is the key to assured offtake.

Myth: Volume security is important.

Reality: Revenue security should be the key objective.

Myth: Downstream integration improves market knowledge.

Reality: Perhaps, but not indispensable, and may not be the most efficient way to use scarce resources.

Myth: Integration will bring order and stability.

Reality: Market order requires much more. Integration will contribute further volatility.

Effects on competition

There are other ways besides those already covered in which competition can be affected by integration. Some, in fact, are so fundamental it's difficult to see how they could be avoided.

Consultant McCall believes some producers can set up the U.S. market for penetration and domination. He says, "Japan has taught us how to market: seek domination and penetration. When competition is driven out, the market is theirs and the price goes up. They've done it with TVs, small cars and other things. A supplier like Saudi Arabia with the lowest cost production and largest reserves in the world can very easily follow the same strategy."

Jobber Wright believes exploration and production will be curtailed as companies become adjusted to secure crude supplies. But no one knows how long this might last. He also believes the probability is greater that foreign imports will increase and gasoline taxes will be raised to offset a growing imbalance in international payments and to dampen consumption.

Italy's Colitti thinks some companies with upstream connections might cut down their refining capacity to the amount of their own equity oil plus their agreed purchases from oil producers. This would help reduce surplus refinery capacity, particularly in Europe.

There's concern that producing countries, because of their low-cost crude, can at any moment compete unfairly downstream. There are features of today's downstream that are totally unlike the previous integration of the major international oil companies. The differences could be crucial. British analyst Robinson explains:

"The old integration (of the international majors) came about as a consequence of commercial involvement both upstream and downstream . . . The new form represents something rather different—a push of national producing countries into the otherwise commercial downstream business.

"Nobody can be absolutely certain the upstream producers will supply crude on commercial terms or need to make commercial returns in their own country. So there is bound to be a nagging concern in the consumer world about the possibility of unfair competition and special treatment in respect to this new wave of investment."

Just about everybody sees a strong possibility that companies in joint ventures with producing countries will have an advantage over companies without them. Jobbers are particularly concerned about the "have-nots" being unable to compete with the haves.

Jobber Wright says flatly, "A company without a joint-venture arrangement and their marketers will suffer."

Consultant McCall, a former jobber, expects joint-venture companies to go on an expansion kick, and other companies will follow as they are prone to do. "We'll be flooded with convenience stores, just the way we were smothered with service stations in the past. Money and secure supply will put tremendous pressure on have-nots, particularly on the jobber side. Jobbers without it won't be able to compete."

In the case of a supply disruption, the advantage of a connection with an oil producer looms even greater. It is even reasonable to question whether not having such a connection would be fatal without government intervention.

Frank Knuettel, oil analyst for Prudential-Bache, New York, says that those companies which have not cut a deal with a producing powerhouse abroad may have to "grovel everyday for their next barrel of crude" while those linked to a producer are just about guaranteed supply.

Bob Mehall, group vice president-supply, for Diamond Shamrock Refining and Marketing, San Antonio, says the recent joint ventures have not affected the market in any significant way as yet. He expects ramifications only "if producing countries treat the downstream as a way of moving oil." However, Mehall doesn't anticipate this, noting that the Kuwaitis have acted with integrity so far in the European operations. He adds that foreign-American partnerships have not resulted in product being obtained less expensively. The real advantage he sees for such a partnership is if a shortage hits, in which case foreign producers will have an inside track.

Citgo: an acid test

Citgo jobbers appear to be demonstrable proof that companies with joint ventures can have an advantageous position. In 1986, Southland Corp. sold a half interest in Citgo to Venezuela, making Citgo a 50-50 partner with the OPEC member. Southland still owns the other half of Citgo.

NPN talked to several Citgo jobbers and they unanimously felt better off indeed, although they did not know for sure whether

Foreign crude, shipped from the far corners of the globe, is finding a more "secure" home in U.S. markets, thanks to joint venture deals with producing countries.

to credit the improvement to the Venezuela partnership or to the new chief executive, Ron Hall, and his new management team.

Daniel Ranks, controller of Knight Enterprises Inc., a Citgo-branded marketer in Farmington Hills, Mich., says, "I don't know whether the change has been the merger or just the new management. But there has been a change. It is working better. Pricing is better and very competitive."

Earl Lawson, owner of Lawson Oil Co., Lawton, Mich., says, "Prices in the last couple of years have been competitive. We weren't as competitive before."

He explains that before the merger, prices were 1/2¢ or more higher than they are now. Because prices are so competitive, he even buys his fuel oil from Citgo now. "It has been very beneficial for us and we are satisfied with the way things have been running," he adds.

Fred Kaplan, Red Kap Sales Inc., Schenectady, N.Y., says, "I have nothing but positive things to say about the Citgo-Venezuela partnership. We have gone from chaos to the best deal available for branded marketers."

Kaplan points out that this year's PMAA Supplier Cup Survey showed Citgo moving from unlisted last year to third among marketers in popularity. He believes the turnaround reflects Hall's strong management and implementation of strategic marketing programs.

"We are now competitive on price and have strong branded support programs. I talked to Venezuelan execs at president Hall's meeting in Florida, and they showed great interest in downstream activities, but gave no hint of meddling."

Meanwhile, Texaco marketers are watching developments in the Texaco-Saudia Arabia matchup with great interest.

"On the whole, I'm optimistic," says jobber Mike Abercrombie. "It was a logical move. Most Texaco crude for the eastern markets was supplied from overseas. Now, the company has a secure source.

"The deal should help Texaco marketers compete on more of an equal footing with other marketers," Abercrombie says. "We're not looking for a better price than the competition gets, just the opportunity to get out of the gate with an equal price, on a consistent basis."

Rules of the road

To prevent the ruination of refining and marketing profitability, Britain's Robinson believes there are certain criteria to be observed in downstream integration:

- Refineries purchased by producers should be economic, that is sophisticated, otherwise the products will not be priced sufficiently high and will devalue the price of crude. "Inefficient refineries should be closed down to help improve the refining capacity balance, not given the kiss of life."
- Refinery improvements should not be made without the prospect of a commercial return on investment. This would simply reduce profitability of all refineries.
- Running excess crude (incremental barrels) should be avoided because it devalues profitability of all refineries.
- The transfer price of crude should be kept fully commercial. Unless producers look for a commercial rate of return on any new investments, "they are doing their own economies an injury, as well as the industry into which they are investing."

Robinson concludes these rules are difficult to follow today, which does not speak well for current downstream investments. "If the criteria outlined above are followed rigorously, it may be almost possible in today's conditions to make downstream investments," he says, because few refineries are for sale at commercially rational prices.

"The downstream business has picked up, expectations have improved, and the seller's idea of value is often a good deal higher than the price that a sensible buyer is prepared to risk taking," Robinson concludes.

The difficulties of making rational downstream investments at this time are seconded by Jack Neafsey, senior vice president, financial, Sun Co. He says, "In today's environment, refining and marketing assets are selling at a premium and crude oil prices are low. Coupled with a limited quantity of marketing assets in the major marketplaces, opportunities may be limited based on solid economics and consistency of objectives."

Sun has made known its willingness to make a deal with a producing country or countries. Nigeria has been mentioned most frequently. Nigeria says it plans to export 50-60% of its crude in the future through refineries and marketing facilities abroad in which it will hold an equity interest.

Transfer price problems

During the 1950s, '60s, and early '70s, integrated major oil companies and producers/refiners took maximum profits on crude oil because tax exemptions, such as the depletion allowance and intangible drilling costs, favored taking profits upstream. The industry was dedicated to pushing crude to market.

This was accompanied by inflated internal transfer prices that capitalized on crude profits, and nobody seemed to care if refining and marketing were losing money or profiting very modestly. The name of the game was selling crude, and refining and marketing were merely the means to that end.

That's when gasoline stations proliferated, often sprouting up four to an intersection, like weeds; station throughputs were pitiful, about a fourth of what they are today; and major oil companies recruited lessee dealers to their doom. It was an industry disgrace that, on average, stations would break three lessee dealers a year.

If the purpose of producing countries is to push crude to market—and why not?—it could bring back those hectic days of buying volume by building stations, refining incremental barrels and flooding the market, and dumping excess products in somebody else's backyard.

More recently, crude has been less profitable, and refining and marketing have become profit centers held accountable for earning a proper return on investment. Fictitious crude transfer prices have, for the most part, disappeared. The industry sectors are being run reasonably rationally.

Jobber Wright recalls the former days,

noting that "transfer prices have always been an enormous problem area between jobbers and their suppliers." He asks, "Will the Saudis tax their crude in a way that will actually move profits to Saudi Arabia tax free? Such questions have as much implication as the price the local marketer is going to have to compete with."

Britain's Robinson believes downstream integration might be a big setback for refining and marketing profitability. He says, "Because no system of cartelization is perfect, there is always a tendency to push crude through vertical channels. This was certainly true under the old integration system" of the international majors.

Tax laws favored crude oil, so that in the internal transfer between the upstream and the downstream, prices were held high, "leaving residual profits in the upstream to the detriment of the downstream." Refining and marketing were not treated as profit centers in their own right.

Recalling that in the late 1970s, after nationalization was substantially completed, when integrated companies set up refining and marketing as profit centers, Robinson says the requirement to perform was much to the benefit of the petroleum business.

"It would be a tragedy if a new wave of downstream investments by producers were to upset this improved performance," Robinson declares. "If the motives of grabbing market share are the real ones which drive the new policy in OPEC, this is a real possibility."

Italy's Colitti believes independent refiners' time is running out. He says, "The slow increase of stability of the oil market in the next 10 years will make life for the independent refiner very hard. He will lose money because the netbacks will keep being lower than crude prices.

"On the other hand, he will be pressed to invest into sophisticating his plant by the combined pressures of the market and ecological regulations. Only the people with equity oil can survive in this market, and above all the equity producers *par excellence*—the producing countries."

Similarly, Bruce McCall thinks downstream integration is "another nail in the coffin of independents. Just like the small jobbers in recent years, they will disappear because of lack of competitive power and investing power. They will tend to be bought up by bigger companies.

"Competition is more and more among companies and countries with big bucks. I think we're getting into a game where only the biggies will last—the Exxons, the Chevrons. The smaller ones won't have the cash to compete with them. I think we have tough years ahead of us. I don't see the government stepping in."

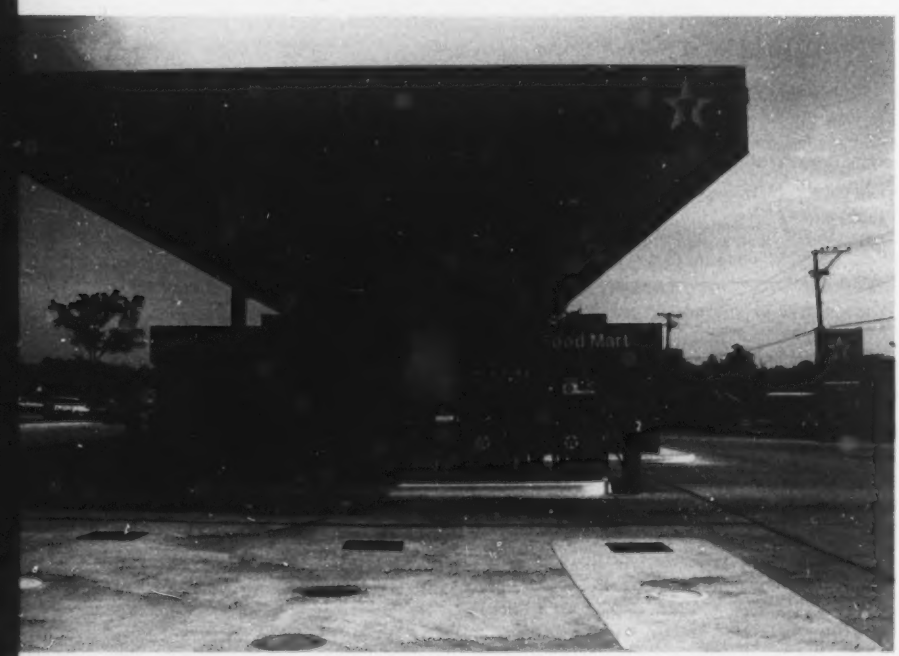
Closely associated with phony transfer prices is the thorny question of selling below cost. Although many below-cost selling laws are on the books, controlling margin-killing prices still largely eludes the industry in many areas.

McCall thinks crude producing countries could run competitors ragged if they had a mind to. "Below-cost laws have been tried. It's impossible to monitor. What's the Saudi cost? How do you prove it?" he asks.

McCall is also concerned about the difficulty of holding foreign countries to the terms of their downstream contracts. He says, "You can't force foreign governments to honor a contract. There are bound to be court battles, and remember the Iranians are still trying to get their assets back after nearly a decade."

John Lichtblau of PIRINC downplays some of these perceived perils in integration. "First, producers like Saudi Arabia want production quotas maintained and prices firmed, not markets awash in crude," he says. "Second, those companies are sensitive to the reaction they create in host countries. OPEC investments are being welcomed in Europe, but the European Economic Commission has warned that unfair marketing practices, such as predatory pricing, will not be tolerated.

"Also," says Lichtblau, "a predatory downstream strategy initiated by a producer could trigger retaliatory measures by other producers. In other words, why risk a loss of 500,000 b/d in upstream volume for a 50,000 b/d gain downstream."



Texaco marketers are looking for good things from that company's new partnership (in Eastern downstream assets), namely a secure source of supply and a consistently competitive price.

How far will it go?

Joint downstream ventures by producing countries are spreading, no doubt about it. Saudi Arabia is on the move. Kuwait prefers wholly-owned ventures. Venezuela is very active and continuing. Nigeria says it has plans. China has uncorked a joint venture. There are others. But how far will the trend go?

One big independent refiner/marketer told NPN that there aren't many large independents that haven't been approached. And a large southern jobber reports one major foreign producer wanted to talk about buying his company.

Another well known refiner/marketer sees foreign interests continuing to move into American downstream industry but not becoming nearly the widespread development that the trade press has played up. A company spokesman says foreign producers haven't used their product access aggressively but have, rather, behaved with "nor-

Integration May Need To Be A Two-Way Street To Work

Downstream integration by producing countries is an attempt to tie upstream and downstream together in a commercial relationship. But in its present form, integration may not succeed, some believe, because it is a one-way street—downstream only.

The integration that succeeded for many years prior to nationalization of the petroleum concessions in the 1970s was commercial and worked both ways within each of the eight international majors--the "Seven Sisters" and CFP (Compagnie Francaise Petrole.) In addition, the companies were interlocked horizontally because each integrated major had arrangements with several petroleum concessions.

Integration of the earlier form would require upstream integration by oil companies, says M. Sylvan Robinson, former president of Shell International Trading Co., London, and now chairman of joint energy programs for the Royal Institute of International Affairs.

"The creative approach to developing some sort of a linkage is a reciprocal linkage through asset swaps," he says. "This may be against the psychological grain in producer countries."

He points out that a number of OPEC countries have retained—"no harm done"—foreign equity shareholders in their concession business: Nigeria, Abu Dhabi, and Indonesia; and outside OPEC, Oman, Dubai, and Yemen.

Such two-way integration would "reestablish some of the features of the classic form of integration," which worked, Robinson says, adding, "The present approach differs in many ways from the old system; the words may be the same but the tune is different and it is the tune that counts."

mal conduct." Although the producing countries have the ability to drown the American domestic scene, they have resisted this, he says.

Ashland's Hall has given a lot of thought to the pros and cons of joint ventures and sees many pluses, but he seriously doubts that a majority of refiners in the U.S. will enter into a partnership with an OPEC nation.

He summarizes, "We believe that reintegration will continue but will not dominate the industry. We foresee that a significant third-party market for crude oil will continue for many years."

Texaco's Gene McGraw thinks downstream integration will eventually cover 50-60% of U.S. volume. He expects this to happen within 10 years, taking off about now.

McCall thinks joint downstream ventures will spread to more than half of the U.S. market.

State Dept.'s Ferriter believes downstream integration by producing countries is, to some degree, self-limiting. It costs a lot of money many don't have. "Almost all OPEC countries are running current account deficits," he says, "and financial constraints may cause them to forego downstream investment opportunities."

Further, he believes that since some downstream deals are motivated by a desire to secure an outlet for heavy crude, countries with high-quality crude should have no difficulty in continuing to market it without owning downstream assets. He adds that refineries are doing pretty well now, and "fire sale" prices are few or nonexistent.

Ferriter notes that some experts believe, on balance, that downstream integration will probably reach its peak with producer countries controlling some 10-15% of the western world's refining capacity.

He says most crude will continue to flow through nonintegrated channels where price competition and speculation will continue.

Britain's Robinson says, "Most crude will continue to flow through nonintegrated channels unless the whole of the downstream is taken over by producers—hardly a politically or commercially viable scenario. So the circle is not closed. Partial integration which does not control the whole market from the upstream to the downstream is unlikely to do much to stabilize markets."

Energy consultant Ait-Laoussine of Nalcosa differentiates between the first downstream investing producers and later ones. The process becomes harder and harder: they cannot always be selective in their investment decisions; their drive to integrate may intensify their constraints; they may end up paying a premium in a stagnant market; and disenchantment may occur as acquired capacity may have to be shut in.

Independent Robert O. Anderson believes there have been far fewer downstream approaches by producing countries than reports indicate. "A lot of the approaches you hear about are fishing expeditions by third parties, rather than directly by the countries themselves," he says.

"The national producing companies are governments, and they just don't do business quite the way we're used to doing it in the private sector. I think the ventures will continue, but I think most of the plans that readily lend themselves to buy out have been acquired. But there are some left to go."

Anderson thinks, too, that downstream ventures are driven by the surplus of crude and consequent low prices. "If world oil markets recovered, by that I mean struck a reasonable balance, say in the $22-$24 bbl. range, I think the pressure to go downstream would be very, very greatly relieved."

There may be nearly a consensus that downstream ventures may not be forever and that they'll perhaps tend to disappear down the road when alternative crude sources start drying up and OPEC once again dominates the market.

Are there no alarms?

Have no doubt that downstream integration by foreign producers is being watched. There is an institutionalized general tracking of all direct investments in the United States by the departments of State, Treasury, and Commerce, to name three agencies.

There are any of a number of governmental and Congressional groups and individuals who are alert to what's happening and have served notice they think it could go too far.

But no alarms have gone off—and there's a reason. The scope of downstream investment hasn't gone very far.

Ferriter says the total direct investment in the U.S. is minuscule compared to our total capital stock—$262-billion of a total gross stock of fixed private capital investment of $13-trillion, or just 2%. He therefore feels that fear of foreign takeover of important sectors of the economy are exaggerated.

Despite headlines, says Ferriter, OPEC members have only about a 4% of total refining capacity in the U.S. and western Europe.

But while the U.S. welcomes well-conceived investments, "There are a number of policy issues which may arise and it will be necessary for the government to follow developments in this area closely."

PIRINC's John Lichtblau figures about 3.5% of Europe's refining capacity is structurally integrated with national foreign oil producing companies, and 7% of that in the U.S. after announced deals are completed.

He thinks growth of such investments in the future will be "much more modest" than they have been in the past five years.

Rep. Richard A. Gephardt (D-Mo.), speaking at a PIRINC conference, says, "In general, the limited level of activity we have seen so far does not present a problem. This country needs investment, both foreign and domestic."

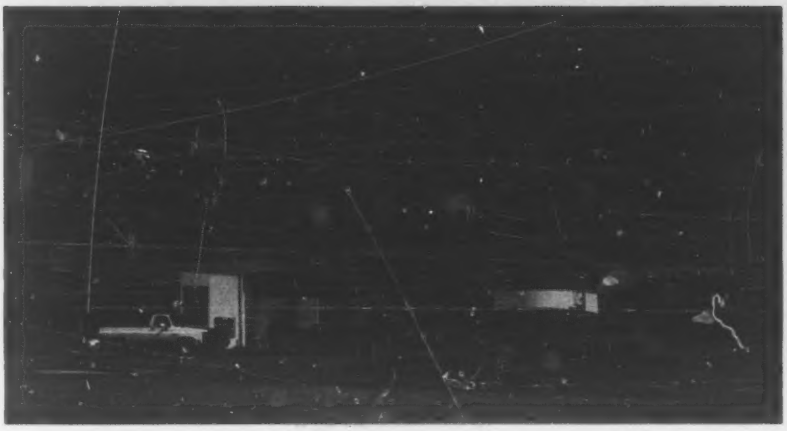
But that's where his equanimity ends. "These trends make me somewhat uncomfortable," he says. "If the downstream investment trend accelerates, we risk

recreating a degree of economic concentration that would bring back some of the political problems of the 1960s, when independent oil producers and refiners sometimes had problems working with vertically integrated companies."

He concludes:

"We should be particularly concerned about countries that have shown a willingness to make supply decisions based on noncommercial political objectives. Within the Congress, many of us will be keeping a close eye on developments. The administration should study and analyze these trends to ensure that they do not pose a serious problem. If the administration does not, Congress may have to do so."

There is an emotional response to foreign incursions of this kind that facts don't entirely deal with. Bruce McCall probably is speaking for many when he says, "Strictly emotionally, it scares me desperately to see the U.S. held by foreign people who don't have our interest at heart . . . Whatever you call it, it's still selling off America to foreign investors. I don't like it. I'd rather Americans own American companies."



Citgo marketers say they are quite happy with the company's two-year-old joint venture with Venezuela. "Pricing is better and very competitive," says one.

Political weapon

As an economic phenomenon, downstream integration is one matter; as a political phenomenon, it is quite another. Petroleum, the world has learned, is a political weapon, and that has not been forgotten in present circumstances.

"Oil is regarded by most governments as a strategic asset, not only commercial," says Melvin A. Conant, president of Conant and Associates and editor of "Geopolitics of Energy."

He recalls the British government's investment in Iranian oil before World War I; U.S. withholding of oil from Japan in 1940-41, "a move which undoubtedly precipitated Japan's attack on Pearl Harbor;" U.S. interest during World War II in controlling Saudi reserves and pipelines to move oil to the Mediterranean; Saudi Arabia's moderation on oil prices to keep wartime pressure on Iran.

"These illustrations are among many of the political uses to which oil can be put when governments act on the strategic leverage which the commodity provides," Conant says.

He notes that the British government looked suspiciously at growing stock holdings of Kuwait in British Petroleum.

Britain has ordered Kuwait to cut its holdings to 9.9% from 21.6% on grounds that Kuwait "could be expected to exercise its influence in support of its own national interest." Conant thinks this sets an enormous precedent for downstream foreign investment.

Conant feels the U.S. has a unique security problem in the Middle East. He explains, "For as long as issues between Arabs and Israelis inevitably seem to bring the United States in on the Israeli side, there will be questions in any administration and among some of the public as to the reliability of supply from Arab producers. Oil is the only leverage most Arab producers have to try to influence U.S. conduct."

Conant declares, "Foreign investments in the U.S. are different from those of Shell or of BP . . . An oil executive or government official who cannot recall the political uses to which oil has been put is a victim of corporate or political amnesia."

The danger grows over time. As Conant puts it, "As supplies tighten, the greater will be the alert." NPN

How Vulnerable Is the World To OPEC Petroleum Reserves?

The General Accounting Office, the investigative arm of Congress, has concluded that because of downstream integration the U.S. is less vulnerable in the short term to a supply disruption because of the increasing stake producers have in this country.

"However, given the inherent uncertainty of the market," GAO observes, "it is difficult to determine how long this trend will continue." One of the main grounds for concern is that remaining world oil reserves are concentrated in OPEC countries. When supplies tighten over time, dependency will grow.

In GAO's assessment, of the remaining recoverable oil in the world, about 67%, or nearly 795-billion bbl. "has been identified as either proved or inferred reserves and could be produced with current technology and existing prices." The remaining recoverable oil is defined as "undiscovered."

Of the remaining worldwide conventional oil reserves, the Middle East dominates with a 53% share (421-billion bbl.) of the total. Current production there could be maintained for many years.

All OPEC countries together, including those in South America, Africa, and Asia, account for about 66% of the total recoverable, conventional oil reserves.

Saudi Arabia's share of the total recoverable reserves is substantial and is estimated to be about 166-billion bbl. of oil, or 21%, of the total. With significant reserves and current production levels, most OPEC countries will be producing oil well into the next century.

By way of comparison, says GAO, the United States and Canada together constitute only about 5% of the total remaining oil or some 53-billion bbl. The Soviet Union, China, and other centrally planned economies together account for about 107-billion bbl. of oil, or nearly 13% of total conventional reserves.

The remaining 110-billion bbl. of oil, or about 14%, are distributed among South America, Africa, Western Europe, and Asia/Oceania.

GAO concludes that the possible beneficial affects of downstream integration are limited over time because by the mid-1990s supplies are likely to tighten and "OPEC countries may no longer need joint or wholly owned downstream outlets to sell their oil.

"With the risk of losing market shares to non-OPEC suppliers reduced, some cartel members may be less constrained to participate in actions such as deliberate production cutbacks."

Why Most Marketers Operate Their Own Fleets

With today's tougher safety regulations, coupled with the ballooning costs of operation and declining hauling allowances from suppliers, it would seem that a lot of marketers would be anxious to sell their trucks and get out of the petroleum transportation business.

Not so. According to a recent study conducted by the publishers of National Petroleum News, 75.9%, or more than three-quarters of the petroleum products delivered by marketers were trucked in company owned-and/or leased equipment. Less than one-fourth (24.1%) of their transportation needs was handled by contract haulers or common carriers.

Also, most marketers with in-house fleets own rather than lease their trucks. The survey shows that except for tank trucks, over 90% of marketers own rather than lease the tractor/trailers, box trucks, vans, pickups, etc. they use to deliver their products.

Obviously, these percentages demonstrate that the majority of marketers feel they can cost-justify operating their own transport fleets. Personal interviews with individual marketer-truck owners indicate that many have found they can operate their own fleets profitably because of the more efficient and durable designs of today's transport equipment, improved vehicle fuel economy, tighter cost controls, better driver selection and training and around-the-clock truck operation.

Despite the costs of replacement and maintenance, many feel they can maintain better control and insure better customer service with their own trucks. In addition, some marketers find ownership gives them a decided edge in responding quickly to rack price movements.

In addition to the ownership data, the study provides detailed analyses of the average number of vehicles per fleet, including a breakdown by type of truck, the average age and miles of service of marketer vehicles, engine-type preferences, plus the types of equipment and options marketers specify for their fleets.

This marketer survey was conducted by the Hunter Energy Network using a balanced sampling of subscribers to NPN and two sister publications, Fuel Oil News and Petroleum/C-Store Products. Several hundred usable responses were generated by the survey and great care was taken to weed out data that could distort accurate profiles of typical marketer operations; for example, large C-store chains with hundreds of box-type trucks.

By Donald M. Smith
Senior Editor

Flexible fleets

According to the Hunter survey, the ratio of usage of in-house vs. common carrier transports among oil marketers is fairly uniform throughout the United States (see Table 1). More marketers—almost 80% of those surveyed—own their own rigs in the Eastern and Western regions of the country. Contract hauling is more prevalent in the Midwest (29.7%), but seven out of ten marketers still operate their own vehicles in that area.

Oil marketers own or lease a variety of vehicles to handle their transport needs. As Table 2 shows, the average marketer

Table 1: Who Hauls Product

	Marketers	Haulers
East	78.8%	21.2%
South	74.4	25.6
Midwest	70.3	29.7
West	78.4	21.6
Total U.S.	75.9%	24.1%

Table 2: Average Number Of Vehicles Per Fleet (Owned & Leased)

	Tank Trucks	Tractors	Tank Trailers	Box Trailers	Platform/ Box Trucks	Pickups/ Vans
East	4.5	4.9	5.5	6.3	1.8	5.4
South	2.7	3.0	2.9	1.5	1.6	2.8
Midwest	3.1	2.3	2.2	3.4	2.2	2.6
West	3.6	2.5	2.7	1.5	1.6	3.6
Total U.S.	3.6	3.2	3.2	3.2	1.9	3.6

Table 3: Percent Of Vehicles Owned—Not Leased

	Tank Trucks	Tractors	Tank Trailers	Box Trailers	Platform/ Box Trucks	Pickups/ Vans
East	86.7%	91.8%	90.9%	100.0%	94.4%	81.5%
South	100.0	86.7	89.7	93.3	100.0	92.9
Midwest	100.0	100.0	95.5	100.0	100.0	100.0
West	100.0	100.0	100.0	100.0	100.0	97.2
Total U.S.	87.2%	93.8%	93.8%	98.3%	99.9%	91.7%

Table 4: Number Of Vehicles In Various Age Categories

	East	South	Midwest	West	Total U.S.
Tank Trucks					
Under 1 Year in Service	1.3	1.0	1.2	2.3	**1.8**
1-3 Years in Service	1.6	1.7	1.6	2.1	**1.7**
4-7 Years in Service	2.4	1.8	1.8	2.1	**2.2**
8-10 Years in Service	2.1	1.5	2.0	1.9	**2.0**
Over 10 Years in Service	2.6	1.8	1.7	2.3	**2.2**
Average Years in Service	8.7	6.6	8.8	8.9	**8.5**
Average Miles in Service	138,670	209,500	155,370	285,450	**185,150**
Tractors					
Under 1 year	5.9	1.5	1.2	1.7	**3.0**
1-3 years	2.2	1.6	1.8	3.4	**2.1**
4-7 years	3.7	2.5	2.0	1.5	**2.5**
8-10 years	2.1	1.8	1.3	1.6	**1.7**
Over 10 years	1.7	1.6	1.3	1.5	**1.7**
Average Years in Service	7.3	6.8	6.5	7.7	**6.8**
Average Miles in Service	566,650	592,840	576,660	639,980	594,036
Tank Trailers					
Under 1 year	1.3	1.8	1.0	1.0	**1.9**
1-3 years	2.8	1.7	1.7	1.9	**2.4**
4-7 years	4.9	1.8	1.9	1.9	**2.7**
8-10 years	3.9	1.8	1.7	1.8	**2.4**
Over 10 years	3.1	4.2	1.6	1.9	**2.5**
Average Years in Service	11.9	8.4	10.9	11.7	**10.4**
Average Miles in Service	999,900	N/A	N/A	999,900	**453,960**
Box Trailers					
Under 1 year	5.5	*	*	1.0	**1.6**
1-3 years	2.0	1.0	1.0	*	**1.5**
4-7 years	1.3	1.0	2.0	1.3	**1.6**
8-10 years	1.0	1.2	1.3	2.0	**1.4**
Over 10 years	2.7	1.8	1.4	1.2	**1.8**
Average Years in Service	8.3	12.3	12.9	10.0	**11.3**
Average Miles in Service	N/A	N/A	N/A	N/A	**N/A**
Box Trucks					
Under 1 year	1.1	1.0	1.2	1.0	**1.1**
1-3 years	2.0	2.3	1.3	2.5	**1.8**
4-7 years	1.4	1.3	1.8	1.8	**1.6**
8-10 years	1.2	1.1	2.9	2.0	**1.9**
Over 10 years	1.0	1.1	1.3	1.0	**1.3**
Average Years in Service	7.9	8.0	7.0	8.2	**7.7**
Average Miles in Service	108,330	162,500	100,000	250,000	**130,000**
Pickups & Vans					
Under 1 year	2.4	1.1	1.5	2.0	**1.9**
1-3 years	2.4	1.6	1.9	2.0	**2.0**
4-7 years	3.5	2.0	2.0	2.0	**2.5**
8-10 years	2.5	1.4	1.2	1.8	**1.8**
Over 10 years	1.4	1.6	1.3	2.0	**1.5**
Average Years in Service	5.8	4.8	6.9	5.7	**6.0**
Average Miles in Service	101,110	100,180	90,310	92,270	**96,110**

*Less than .1

operates 3.6 tank trucks, 3.2 tractors and a like number of tank and box trailers, 1.9 box trucks and 3.6 pickups and vans. The survey found that Eastern fleets average more owned and leased vehicles in most categories than their counterparts in other regions. This reflects, at least in part, the higher percentage (78.8%) of marketer-operated fleets in that region.

What this survey data also indicates is that the average marketer has shifted away from single or limited product lines (motor fuel, for example) to a marketing strategy pegged to several different profit streams.

To implement that diversified marketing strategy, the data suggests that a typical jobber might own and operate several 3,000-gal. tank trucks for home delivery of heating oil, or motor fuel to commercial, farm and small station accounts. Add to this three or four tractor/trailers for motor fuel delivery to larger stations, several platform/box trucks for transporting tires, batteries, accessories, motor oil and other products, plus three to four pickups or vans for service and miscellaneous jobs and the result is a fleet profile designed for diversified profit ventures.

While leasing of equipment is frequently touted as a way to avoid tying up capital, marketers prefer owning the rigs they operate by an overwhelming margin (Table 3). Tank trucks are leased the most, but even in that category the percentage of leasing (12.8%) vs. owning (87.2%) is modest.

It's no secret that diesel-powered trucks have been gaining in popularity and the Hunter survey bears this out. According to marketers responding to the survey, more than 85% of their tank trucks are now diesels, while virtually all of the tractors (96.9%) they operate also use diesel fuel.

Age and mileage

Marketers expect to get a lot of service out of their vehicles, and particularly their petroleum hauling rigs, the study reports. Table 4 provides a detailed breakdown of the number of vehicles in various age categories along with the average miles in service by type of vehicle.

By a wide margin, tractors and tank trailers travel more miles, on average, than any other type of truck equipment. Mileage figures on box trailers undoubtedly are high, too, in view of the average life cycle of 11.3 years, but insufficient data was received on those units to determine their miles of service.

The workhorse hauling demands on tractors accounts for their relatively shorter average replacement cycle of 6.8 years. The average tractor racks up almost 600,000 miles of service, or about 87,000 miles a year, before it is replaced.

By comparison, tank trucks last 8.5 years, but average only 22,000 miles per year, reflecting their typically short-haul responsibilities. However, the average tank truck operated by a Western region marketer registers twice the annual mileage (32,000 miles) that a similar rig in the densely-populated East does.

Box trucks are replaced every 7.7 years and cover an average of less than 17,000 miles per year. Vans and pickups average only 16,000 miles a year and are normally traded in after less than 100,000 miles of service.

A few individual marketers get remarkable service life out of their hauling equipment. The transport rigs at Truman Arnold Co's., Texarkana, Texas, operate 18-20 hours per day and travel close to 200,000 miles per year before being traded in every fourth year or so [*NPN*—Nov. '87, p50]. A major reason for this extended service is a full-service maintenance shop which keeps the vehicles in top condition, according to Arnold's transportation chief, Frank Caudle.

More than half of the respondents to the Hunter survey reported they had in-house maintenance facilities and employed full-time mechanics. Over 70% of Western fleets have full-time mechanics, compared to 57.9% of the Eastern operations.

Driver comfort

In the specification of truck options, driver comfort was cited as the top priority by most marketers. Among the options marketers said they planned to acquire with their next truck purchases, air conditioning was the number one choice, closely followed by custom driver seats. Control devices such as recording tachometers and ticket printer meters were much further down the list of their choices of options.

As for tank preferences, the survey showed that marketers choose aluminum over steel by a 60-40 ratio. The respondents also said they prefer oval over flat sided tanks by a similar margin.

Marketers like the bigger class trucks, too, the survey found. Class 8 (33,000 lbs. GVW and up) tractors accounted for 42% of the fleet vehicles in that category. Even among tank trucks, Class 8 trucks hold a slight edge over Class 6 and 7 vehicles. NPN

The average petroleum marketer operates 3.6 tank trucks, serving a diversity of home heating oil, commercial, farm and small station accounts.